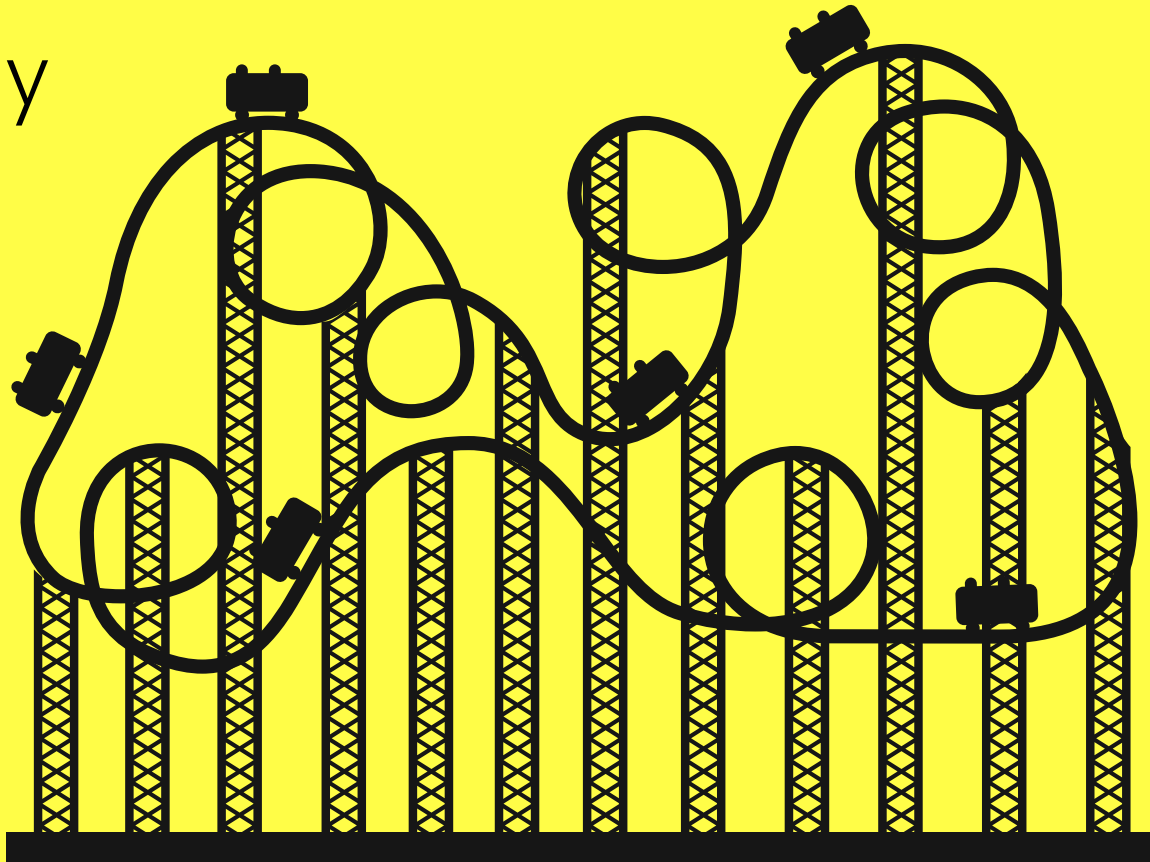
The Web Developer Bootcamp

Js Loops

REPEAT STUFF. REPEAT STUFF. REPEAT STUFF.

LOOPS

- Loops allow us to repeat code
  - "Print 'hello' 10 times
  - Sum all numbers in an array
- There are multiple types:
  - for loop
  - while loop
  - for...of loop
  - for...in loop



For Loops

Buckle Up!

For Loop Syntax

```
for (
    [initialExpression];
    [condition];
    [incrementExpression]
)
```

Our First For Loop

```
          start at 1          stop at 10     add 1 each time
for (let i = 1; i <= 10; i++) {
    console.log(i);
}
```

Another Example

```
for (let i = 50; i >= 0; i -= 10) {
    console.log(i);
}
//50
//40
//30
//20
//10
//0
```

- Start *i* at 50
- Subtract 10 each iteration
- Keep going as long as i >= 0

Infinite Loops

```
//DO NOT RUN THIS CODE!
for (let i = 20; i >= 0; i++) {
    console.log(i);
} //BADDDD!!!
```

Looping Over Arrays

```
const animals = [ 'lions', 'tigers', 'bears' ];

for (let i = 0; i < animals.length; i++) {
    console.log(i, animals[i]);
}
//0 'lions'
//1 'tigers'
//2 'bears'
```

To loop over an array, start at index 0 and continue looping to until last index (length-1)

NESTED LOOPS

```
let str = 'LOL';
for (let i = 0; i <= 4; i++) {
    console.log("Outer:", i);
    for (let j = 0; j < str.length; j++) {
        console.log('  Inner:', str[j]);
    }
}
```

```
Outer: 0
  Inner: L
  Inner: O
  Inner: L
Outer: 1
  Inner: L
  Inner: O
  Inner: L
Outer: 2
  Inner: L
  Inner: O
  Inner: L
Outer: 3
  Inner: L
  Inner: O
  Inner: L
Outer: 4
  Inner: L
  Inner: O
  Inner: L
```

While Loops

```
let num = 0;
while (num < 10) {
    console.log(num);
    num++;
}
```

```
0
1
2
3
4
```

While loops continue running as long as the test condition is true.

A Common Pattern

```
let targetNum = Math.floor(Math.random() * 10);
let guess = Math.floor(Math.random() * 10);

while (guess !== targetNum) {
    console.log(`Guessed ${guess}...Incorrect!`);
    guess = Math.floor(Math.random() * 10);
}
console.log(`CORRECT! Guessed: ${guess} & target was: ${targetNum}`);
```

The Break Keyword

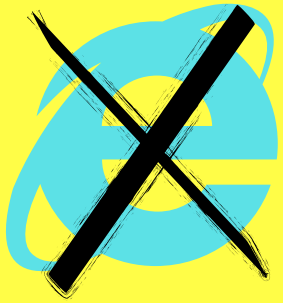
```
let targetNum = Math.floor(Math.random() * 10);
let guess = Math.floor(Math.random() * 10);

while (true) {
    guess = Math.floor(Math.random() * 10);
    if (guess === targetNum) {
        console.log(`CORRECT! Guessed: ${guess} & target was: ${targetNum}`);
        break;
    }
    else {
        console.log(`Guessed ${guess}...Incorrect!`);
    }
}
```

FOR...OF

A nice and easy way of iterating over arrays

(or other iterable objects)



No Internet Explorer Support

For...Of

```
for (variable of iterable) {
  statement
}
```

An Example

```
let subreddits = [ 'soccer', 'popheads', 'cringe', 'books' ];
for (let sub of subreddits) {
    //Do this for every item in subreddits array:
    console.log(`${sub} - www.reddit.com/r/${sub}`);
}
```

Nested For...Of

```
const magicSquare = [
  [ 2, 7, 6 ],
  [ 9, 5, 1 ],
  [ 4, 3, 8 ]
];

for (let row of magicSquare) {
    let sum = 0;
    for (let num of row) {
        sum += num;
    }
    console.log(`Row of ${row} sums to ${sum}`);
}
```